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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,769	03/06/2002	Soon-Bum Kwon	8733.595.00	6278

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EXAMINER

CALEY, MICHAEL H

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 05/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/090,769

Applicant(s)

KWON ET AL.

Examiner

Michael H. Caley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 5, 7, 8, 10, 11, 14, 15, 17, 20, 22, 23, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatano et al. (U.S. Patent No. 6,084,647 "Hatano") in view of Woodgate et al. (U.S. Patent No. 5,917,562 "Woodgate").

Regarding claims 1 and 14, Hatano discloses a stereoscopic liquid crystal display device having:

first and second substrates facing and spaced apart from each other (Figure 1 elements 101 and 102);

a liquid crystal polymer film having first and second micro-polarizing regions formed by light exposure on an inner surface of the first substrate, polarization axes of the first and second micro-polarizing regions being different from each other (Figure 1 elements 106 and 107; Column 9 lines 43-67 and Column 10 lines 1-19);

a common electrode (Figure 1 element 122);

a switching device (Figure 15 element 23);

a pixel electrode connected to the switching device (Figure 15 element 25);

a liquid crystal layer interposed between the common electrode and the pixel electrode (Figure 1 element 103).

Hatano fails to disclose a first polarizing plate on the liquid crystal polymer film, the placement of the common electrode on the first polarizing plate, and a second polarizing plate on an outer surface of the second substrate. Woodgate, however, teaches a first polarizer placed on an inner surface of a substrate and a second polarizer on an outer surface of a substrate (Figure 7). Additionally, Woodgate teaches a flexible placement of the common electrode, which includes a possible placement on the first polarizing plate (column 15 lines 48-54).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added a first polarizing plate on the liquid crystal polymer film, to have placed the common electrode on the first polarizing plate, and to have placed a second polarizing plate on an outer surface of the second substrate. The addition of polarizing plates to Hatano's stereoscopic liquid crystal display device would have been advantageous to ensure a uniform polarization of light entering and exiting the liquid crystal layer, as is a generally consistent practice in the art of liquid crystal displays. The prior art teaches a flexible placement of the polarizing plates, thus placement as proposed would have been according to an engineering expediency to accommodate for other types of elements used in the device. The placement of the common electrode on the polarization plate would have also been advantageous to locate the electrode near the liquid crystal layer such that a field could be applied to the layer with reduced power.

Regarding claims 2 and 15, Hatano discloses the axes of the first and second micro-polarizing regions as perpendicular to each other (Figure 1 elements 106 and 107).

Regarding claims 4 and 17, Hatano discloses a color filter layer between the first substrate and the liquid crystal polymer film (Figure 1 element 120).

Regarding claims 5 and 20, Hatano fails to disclose placement of the color filter layer between the first polarizing plate and the common electrode. Woodgate, however, teaches a placement of the color filter layer near to the liquid crystal layer (Column 16 lines 21-27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have placed the color filter layer between the first polarizing plate and the common electrode. Given that the first polarizing plate is located near the first substrate and the common electrode is placed near the second substrate, such a limitation gives a large range of placement for the color filter layer. Woodgate teaches a placement of the color filter layer near to the liquid crystal layer which would include a placement as proposed. Such a placement would have been advantageous in order to avoid parallax effects as described by Woodgate.

Regarding claims 7 and 22, Hatano discloses the switching device as a thin film transistor having a gate electrode, source and drain electrodes, and an active layer (column 9 lines 17-42).

Regarding claims 8 and 23, Hatano discloses an anti-glare film formed on an outer surface of the first substrate (Figure 1 element 111).

Regarding claims 10, 11, 25, and 26, Hatano and Woodgate fail to disclose the polymer for the polarizing plate as poly vinyl alcohol. The Examiner takes Official notice that poly vinyl alcohol is a commonly known and used material in the art for forming polarizing plates due to its qualities as a cheaply manufactured and effective polarizing material.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the polarizing plate from poly vinyl alcohol. The choice of such a material for construction would have been motivated by a desire to obtain a cheaply made and effective polarizer through old and well known means.

Claims 3 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatano in view of Faris (U.S. Patent No. 6,133,980).

Hatano fails to disclose the micropolarizing region as having a chiral dopant. Faris, however, teaches a liquid crystal film with birefringent properties to provide phase retardation regions on the micropolarizer (Column 12 lines 18-56; Column 24 lines 61-67 and Column 25 lines 1-9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided a chiral dopant in the micropolarizer disclosed by Hatano. Such a device would be effective to eliminate the need for the phase layer (Figure 1 element 108), since a chiral dopant introduced into the crystal polymer film would be effective to produce the desired birefringent effects as described by Faris. One would have been motivated to introduce the chiral dopant in order to eliminate the need for the phase plate layer to reduce the number of separate components in the device and eliminate the costly step of aligning the phase plate with the polymer film.

Claims 6, 12, 18, 19, 21, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatano in view of Woodgate and in further view of Shimoto et al. (U.S. Patent No. 5,287,208 "Shimoto").

Hatano fails to disclose an overcoat layer between as proposed. Shimoto, however, teaches a benzocyclobutene overcoat layer to provide a protective coating for the pixel electrodes and common electrode (Figure 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided a benzocyclobute overcoat layer between the color filter layer and the common electrode. As taught by Shimoto, such a layer would have been advantageous for protecting the electrodes to extend the life of the device (Column 2 lines 6-12). The choice of benzocyclobutene as a construction material would have been motivated by a desire to obtain the protective effects as taught by Shimoto while exhibiting proper light transmission abilities.

Claims 9 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatano in view of Woodgate and in further view of Matsunaga et al. (U.S. Patent No. 6,541,185 "Matsunaga").

Hatano fails to disclose the method of forming the liquid crystal polymer film. Matsunaga, however, teaches a similar micropolarizing polymer film for use in a stereoscopic device formed by a spin coating method (Column 3 lines 63-67, Column 4 lines 1-11, 66-67, Column 5 lines 1-3, Column 25 lines 60-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the polymer film on the substrate using a spin-coating method. Such a method as described by Matsunaga is a preferred method for forming the micropolarizing film on a substrate. One would have been motivated to form the film on the substrate in such a way to benefit from a process accommodating to directly applying the film to a substrate to achieve the expected results of such a process as taught by Matsunaga.

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Claims 13 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatano in view of Woodgate and in further view of Andreatta et al. (U.S. Patent No. 5,751,389 "Andreatta").

Hatano discloses all of the proposed limitations except for the common electrode as made of indium-tin-oxide or indium-zinc-oxide. Andreatta, however, teaches forming a transparent common electrode from indium-tin-oxide (Column 31 lines 29-36).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the common electrode from indium-tin-oxide. Such a material for the electrode is old and well known in the art due to its exceptional conducting and transparent properties over other available materials. One would have been motivated to use such a material for constructing the electrode to benefit from the expected results and established manufacturing method of using such a material.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael H. Caley whose telephone number is (703) 305-7913. The examiner can normally be reached on M-F 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.


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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



mhc

May 19, 2003


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